



# LITHIUM STORAGE SYSTEM TS 48 V

The commercial all-rounder

**TESVOLT**  
THE ENERGY STORAGE EXPERTS



## APPLICATIONS

- **Back-up power:**  
In the case of a power failure, your storage system is ready to supply power in a split second.
- **Self-consumption optimisation:**  
Use more of the power you have generated.
- **Off-grid power supply:**  
Create your own utility grid, for example in combination with a photovoltaic system.



## MAXIMUM SAFETY

Prismatic battery cells are incredibly durable, safe and powerful – particularly in comparison to round cells. TESVOLT uses Samsung SDI cells and offers a performance guarantee of 10 years on the battery modules.



## FLEXIBILITY NOW AND IN THE FUTURE

Our TESVOLT TS storage systems not only offer flexible configuration options at the moment of purchase – thanks to the innovative Active Battery Optimizer technology, the capacity can also be expanded years later.





## LONG LIFESPAN

The lifespan of a battery has a huge impact on its economic efficiency. Our storage system features outstanding performance: all components are designed to last 8,000 cycles or offer a 30-year lifespan.



## HIGH PERFORMANCE

## WITHOUT COMPROMISE

TESVOLT TS storage systems can store energy very quickly, and release it again just as quickly. With a continuous power rating of 1C, the storage system is optimized for professional use in commercial applications, agriculture and industry.

# A POWERHOUSE

# FOR ALL PURPOSES

**Our battery storage system can be optimally adapted to suit every application.**

Whether it's used for emergency power, or coupled to the utility grid or off-grid, whether it's in the desert or the polar circle, with the TESVOLT TS storage system, TESVOLT is offering power storage technology for all types of use. The TESVOLT TS storage system is not only flexible, with a size and output that can be adapted to suit any need, it is also one of the most advanced and efficient storage systems. It is extremely robust and therefore well suited to the hardest tasks. Thanks to high-quality battery cells from the automobile industry and innovative technologies, such as the Active Battery Optimizer, our TESVOLT TS storage system is one of the most efficient and durable products on the market.



## BATTERY MODULE

Every battery module has its own Active Battery Optimizer (ABO) that can be separated from the module in a few easy steps, for example, for servicing.

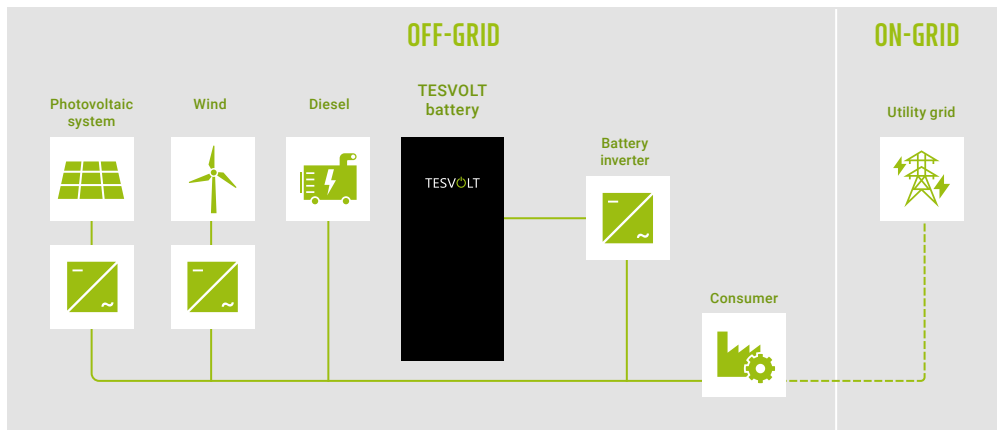


## SAMSUNG SDI CELLS

Prismatic cells from Samsung SDI are extremely safe. For example, the NSD (Nail Safety Device) ensures that the cell will not catch fire even when penetrated with a metal nail.



- 1 Active Power Unit
- 2 Battery module
- 3 Overcharge Safety Device (OSD)
- 4 Vent
- 5 Fuse
- 6 Active Battery Optimizer



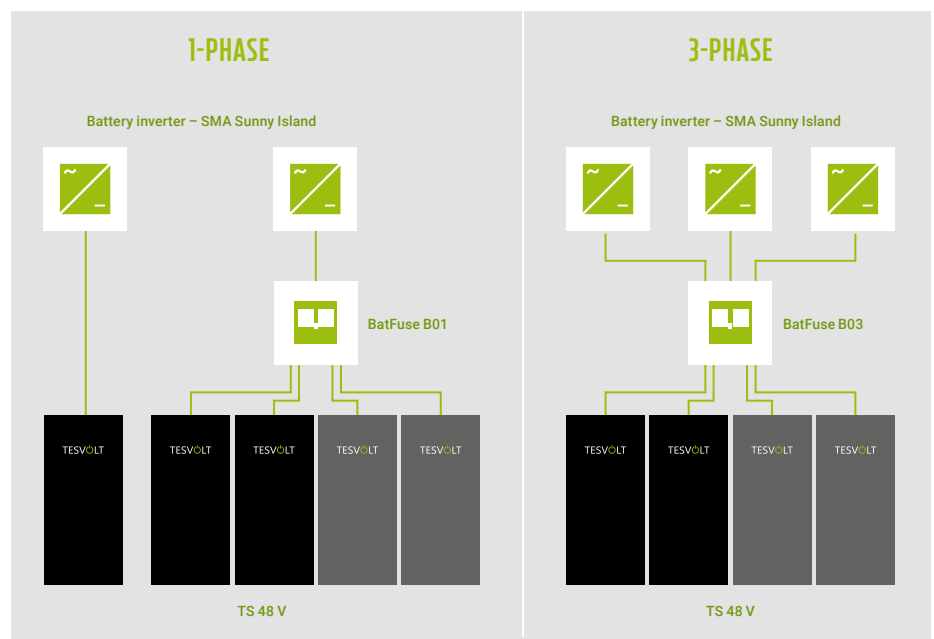
## OFF-GRID OR ON-GRID

TESVOLT TS storage systems can be integrated into stand-alone grids and can also be connected to the utility grid. They can be flexibly combined with any sort of energy generator, including photovoltaics, bio energy, wind power and diesel generators.

## MODULAR SYSTEM PRINCIPLE

**TESVOLT TS storage systems can be flexibly adapted to suit any operating purpose:**

- The desired energy is built up in 4.8 kWh increments. An Active Power Unit (APU) can monitor up to 16 battery modules.
- Three different racks are available as housing, each holding up to 5, 8 or 10 battery modules.
- 1-phase or 3-phase supply and the desired connected load determine the number of battery inverters required.



## SYSTEM CONFIGURATIONS

The table below shows the energy content for certain configurations, depending on the capacity in use by SMA Sunny Island battery inverters.

Energy of System	3,3 kW	4,6 kW	6,0 kW*	9,9 kW	13,8 kW	18 kW	36 kW	54 kW	72 kW	90 kW	108 kW	126 kW	144 kW	162 kW	180 kW	198 kW	216 kW	
3686,4 kWh																		
460,8 kWh																		
422,4 kWh																		
384,0 kWh																		
345,6 kWh																		
307,2 kWh																		
268,8 kWh																		
230,4 kWh																		
192,0 kWh																		
153,6 kWh																		
115,2 kWh																		
76,8 kWh																		
48,0 kWh																		
43,2 kWh																		
38,4 kWh																		
33,6 kWh																		
28,8 kWh																		
24,0 kWh																		
19,2 kWh																		
14,4 kWh																		
9,6 kWh																		
4,8 kWh																		
SMA Sunny Island	1 x 4.4M	1 x 6.0H	1 x 8.0H	3 x 4.4M	3 x 6.0H	3 x 8.0H	Over 18 kW of power, the use with multicuster boxes is permitted only in off-grid applications.											

On-grid/back-up power operation without overload capacity      On-grid and off-grid/back-up power with overload capacity

The data on the SMA Sunny Island battery inverter's overload capacity is for higher AC capacities during off-grid or back-up power operation for 30 minutes / 5 minutes / 3 seconds according to the manufacturer's data sheet from SMA Solar Technology AG.

\* Locally applicable regulations and statutory standards require degrading to a maximum of 4.6 kW for grid-connected operation due to imbalance load specifications.

## TECHNICAL SPECIFICATIONS TESVOLT BATTERY MODULE

Module energy	4.8 kWh	
C-rate	1C	
Cells	Lithium NMC prismatic (Samsung SDI)	
Max. charging, discharging current	94 A	
Cell balancing	Active Battery Optimizer	
Cycles @ 100% DoD 70% EoL   23 °C +/- 5°C 1C/1C	6000	
Cycles @ 100% DoD 70 % EoL   23 °C +/- 5°C 0.5C/0.5C	8000	
Efficiency (battery)	up to 98 %	
Operating voltage	47.6 to 58.1 V DC	
Operating temperature	-10 to 50 °C	
Humidity	0 to 85 % (non condensing)	
Altitude of the installation site	< 2000 m above sea level	
Weight	34 kg	
Dimensions (H x W x D)	163 x 490 x 480 mm	
Certificates/standards	Cells	IEC 62619, UL 1642, UN 38.3
	Product	CE, UN 38.3, IEC 61000-6-1/2/3/4, BattG 2006/66/EC
Guarantee	10-year performance guarantee, 5-year system guarantee	
Recycling	TESVOLT offers free return of batteries from Germany	
Battery specification as per DIN EN 62620:2015	IMP47/175/127/[14S]E/-20+60/90	

## COMPLETE SYSTEM

	2	3	4	5	6	7	8	9	10
Number of battery modules									
TS 25 (2–5 modules)	1300 x 600 x 600 mm (H x W x D)	•	•	•	•				
TS 40 (2–8 modules)	1900 x 600 x 600 mm (H x W x D)	•	•	•	•	•	•	•	
TS 50 (2–10 modules)	2300 x 600 x 600 mm (H x W x D)	•	•	•	•	•	•	•	•
TS Flex (energy as required)	Flexibly configure your system according to your requirements.								
Energy [kWh]	9.6	14.4	19.2	24	28.8	33.6	38.4	43.2	48
Capacity [Ah]	188	282	376	470	564	658	752	846	940
Maximum output power	1C								
Maximum output current [A]	188	282	376	470	564	658	752	846	940
Maximum short circuit current per APU [A]	1200								
Self-consumption (standby) [W]	3 (without battery inverter)								
Weight [kg]	188	222	256	290	374	408	442	496	530
System	1-phase, 3-phase								
Protection class	IP 20 (indoor use)								
System compatibility	SMA Sunny Island (SMA Solar Technology AG)								

## ABOUT TESVOLT

Daniel Hannemann and Simon Schandert established TESVOLT in the summer of 2014 with a vision – to bring affordable, clean energy to every corner of the world. Their aim was to develop and manufacture battery systems that store power from renewable energy sources as efficiently as possible.

Given that the biggest energy consumers in many countries are trade and industry, the company focused on storage systems with a large capacity from the very beginning. Today, TESVOLT produces its solutions for commercial storage systems in series and supplies them all around the world.

Your certified TESVOLT partner

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